



METHYL PARATHION

CAS # 298-00-0

Agency for Toxic Substances and Disease Registry ToxFAQs

September 1995

This fact sheet answers the most frequently asked health questions (FAQs) about methyl parathion. For more information, call the ATSDR Information Center at 1-888-422-8737. This fact sheet is one in a series of summaries about hazardous substances and their health effects. This information is important because this substance may harm you. The effects of exposure to any hazardous substance depend on the dose, the duration, how you are exposed, personal traits and habits, and whether other chemicals are present.

SUMMARY: The general population is probably not exposed to methyl parathion. However, exposure to methyl parathion may occur at farms where it has been sprayed. Methyl parathion is a powerful poison that affects the central nervous system. This chemical has been found in at least 16 of 1,416 National Priorities List sites identified by the Environmental Protection Agency.

What is methyl parathion?

(Pronounced mëth'əl pǎr'ə-thi'ŏn)

Methyl parathion is an insecticide that comes in two forms, white crystals or a brownish liquid. It smells like rotten eggs and is similar to nerve gas.

It has been made in the United States since 1952. Methyl parathion is used to kill insects on farm crops, especially cotton. It is a restricted-use pesticide. This means that only trained people are allowed to mix, load, and spray it.

What happens to methyl parathion when it enters the environment?

- ☐ Methyl parathion enters the environment primarily through spraying on farm crops.
- ☐ Methyl parathion is rapidly broken down to other chemicals in water and soil.
- ☐ Fish do not appear to take in and store methyl parathion from the water.

How might I be exposed to methyl parathion?

- ☐ Most people are not exposed to methyl parathion.

- ☐ Exposure is most likely for those people living or working near or on a farm where methyl parathion is sprayed on crops.
- ☐ Farm workers, pesticide sprayers, or people in factories that make methyl parathion may also be exposed to it.
- ☐ Methyl parathion has been detected at very low levels in food.

How can methyl parathion affect my health?

Methyl parathion is a poisonous chemical that affects the central nervous system. Exposure to very high levels for a short time in the air or water may cause loss of consciousness, dizziness, confusion, headaches, difficulty breathing, chest tightness, blurred vision, sweating, and even death.

Changes in mental state may last several months after exposure to high levels of methyl parathion has ended.

It is not known whether exposure to low levels affects people's health. Animal studies have shown effects on the central nervous system, decreased heart rate and blood pressure, and a reduced ability of the animals to fight infection from long-term ingestion exposure to methyl parathion.

ToxFAQs Internet address via WWW is <http://www.atsdr.cdc.gov/toxfaq.html>

How likely is methyl parathion to cause cancer?

The International Agency for Research on Cancer has determined that methyl parathion is not classifiable as to its carcinogenicity to humans.

No studies are available on carcinogenic effects in people, and cancer was not found after exposure of rats and mice to methyl parathion in the diet.

Is there a medical test to show whether I've been exposed to methyl parathion?

There are several medical tests available to determine whether you have been exposed to methyl parathion.

The first test measures methyl parathion in the blood or measures p-nitrophenol, a breakdown product of methyl parathion, in the urine. This test is only reliable for about 24 hours after you are exposed, because methyl parathion breaks down quickly and leaves the body.

The second test measures the levels of a substance called cholinesterase in the blood. If these levels are less than half what they should be and you have been exposed to methyl parathion, you may get symptoms of poisoning.

Cholinesterase levels in red blood cells can stay low for more than a month after you have been exposed to methyl parathion.

Has the federal government made recommendations to protect human health?

The Environmental Protection Agency (EPA) allows no more than 0.1 to 5.0 parts of methyl parathion in 1 million parts of raw farm products (0.1–5 ppm), such as fruits, vegetables, or animal food.

The EPA has recommended guidelines for exposure to methyl parathion in drinking water. They recommend that exposures in children should not exceed 0.3 milligrams per liter (mg/L) for 1- to 10-day periods or no more than 0.03 mg/L for longer periods (7 years). Adults should not be exposed to more than 0.002 mg/L for a lifetime.

The EPA requires that discharges or accidental spills of 100 pounds or more of methyl parathion into the environment be reported.

The National Institute for Occupational Safety and Health (NIOSH) recommends an occupational exposure limit of 0.2 milligrams of methyl parathion in a cubic meter of air (0.2 mg/m³) for an 8-hour workday over a 40-hour workweek.

The American Conference of Governmental Industrial Hygienists (ACGIH) has established the same guidelines as NIOSH for the workplace.

Glossary

Carcinogenicity: Ability to cause cancer.

Cholinesterase: An enzyme found in blood.

Ingesting: Taking food or drink into your body.

Insecticide: A chemical that kills insects.

Long-term: Lasting one year or more.

Milligram (mg): One thousandth of a gram.

Short time: Lasting 14 days or less.

References

Agency for Toxic Substances and Disease Registry (ATSDR). 1992. Toxicological profile for methyl parathion. Atlanta, GA: U.S. Department of Health and Human Services, Public Health Service.

Where can I get more information?

For more information, contact the Agency for Toxic Substances and Disease Registry, Division of Toxicology, 1600 Clifton Road NE, Mailstop E-29, Atlanta, GA 30333. Phone: 1-888-422-8737, FAX: 404-639-6359. ToxFAQs Internet address via WWW is <http://www.atsdr.cdc.gov/toxfaq.html> ATSDR can tell you where to find occupational and environmental health clinics. Their specialists can recognize, evaluate, and treat illnesses resulting from exposure to hazardous substances. You can also contact your community or state health or environmental quality department if you have any more questions or concerns.

